

WHAT IS CLAIMED IS:

1. A network switch comprising
a CPU;
a memory system having circuitry operable to attach to the CPU;
a switch fabric system having circuitry operable to attach to the CPU;
a port controller having circuitry operable to attach to the switch fabric system;
a software application operable to execute on the CPU;
a Forwarding Database Distribution Library (FDDL) system operable to execute on the CPU; and
a switch device driver operable to execute on the CPU,
wherein the software application is operable to communicate with the FDDL system, the FDDL system is operable to communicate with the switch device driver, and the switch device driver is operable to communicate with the switch fabric.

2. The network switch of claim 1 further comprising a second software application operable to execute on the CPU,
wherein the second software application communicates with the FDDL system.

1 3. The network switch of claim 1 wherein the FDDL system defines an FDDL
2 API for communication with the software application, and the FDDL system
3 defines a Switch Services API for communication with the switch device driver.

1 4. The network switch of claim 2 wherein the FDDL system defines an FDDL
2 API for communication with the software application and the second software
3 application, and the FDDL system defines a Switch Services API for
4 communication with the switch device driver.

5 5. The network switch of claim 2 wherein the FDDL system comprises:
6 a base FDDL system;
7 a software application tower FDDL system; and
8 a second software application tower FDDL system
9 wherein the base FDDL system communicates with the switch device
10 driver, the software application communicates with the software
11 application tower FDDL system, the second software application
communicates with the second software application tower FDDL
system, and the base FDDL system communicates with the software
application tower FDDL system and the second software application
tower FDDL system.

- 1 6. The network switch of claim 1 further comprising:
2 an independent software application operable to execute on the CPU; and
3 an independent software application shim operable to execute on the CPU,
4 wherein the independent software application communicates with the
5 independent software application shim and the independent software
6 application shim communicates with the switch device driver.
- 7 7. The network switch of claim 6 further comprising a second software
 application operable to execute on the CPU,
 wherein the FDDL system defines an FDDL API for communication with
 the software application and the second software application, and the
 FDDL system defines a Switch Services API for communication
 with the switch device driver.
- 8 8. The network switch of claim 6 wherein the FDDL system comprises:
2 a base FDDL system;
3 a software application tower FDDL system; and
4 a second software application tower FDDL system
5 wherein the base FDDL system communicates with the switch device
6 driver, the software application communicates with the software
7 application tower FDDL system, the second software application
8 communicates with the second software application tower FDDL
9 system, and the base FDDL system communicates with the software

10 application tower FDDL system and the second software application
11 tower FDDL system.

1 9. A network switch comprising:
2 a CPU;
3 a memory system having circuitry operable to attach to the CPU;
4 a switch fabric system having circuitry operable to attach to the CPU;
5 a port controller having circuitry operable to attach to the switch fabric
6 system;
7 a protocol means for providing a service to a network system;
8 a Forwarding Database Distribution Library (FDDL) means for
9 communicating with the protocol means; and
10 a switch device driver means for communicating with the FDDL means and
11 the port controller.

1 10. The network switch of claim 9 further comprising a second protocol means
2 for providing a second service to the network system,
3 wherein the FDDL means communicates with the second protocol means.

1 11. The network switch of claim 9 wherein the FDDL means defines an FDDL
2 API for communication with the software application, and the FDDL means defines
3 a Switch Services API for communication with the switch device driver.

1 12. The network switch of claim 10 wherein the FDDL means defines an FDDL
2 API for communication with the protocol means and the second protocol means,
3 and the FDDL system defines a Switch Services API for communication with the
4 switch device driver means.

1 13. The network switch of claim 10 wherein the FDDL means comprises:
2 a base FDDL means for communicating with the switch device driver
3 means;
4 a protocol tower FDDL means for communicating with the protocol means
5 and the base FDDL means; and
6 a second protocol tower FDDL means for communicating with the second
7 protocol means and the base FDDL means.

1 14. The network switch of claim 9 further comprising:
2 an independent protocol means for providing an independent service to the
3 network system; and
4 an independent protocol shim for communicating with the independent
5 protocol means and the switch device driver means.

1 15. The network switch of claim 14 further comprising a second protocol means
2 for providing a second service to the network system,
3 wherein the FDDL means communicates with the second protocol means.

- 1 16. The network switch of claim 14 wherein the FDDL means comprises:
2 a base FDDL means for communicating with the switch device driver
3 means;
4 a protocol tower FDDL means for communicating with the protocol means
5 and the base FDDL means; and
6 a second protocol tower FDDL means for communicating with the second
protocol means and the base FDDL means.

1 17. A method of providing communications over a network system utilizing a
2 first protocol and a second protocol, the method comprising the steps of:

3 receiving information at a port controller in a first protocol from a first
4 node machine;

5 communicating the information from the port controller to a switch fabric;

6 communicating the information from the switch fabric to a switch device
7 driver within an operating system;

8 communicating the information from the switch device driver to a

9 Forwarding Database Distribution Library (FDDL); and

10 communicating the information from the FDDL to a first protocol client.

11 18. The method of claim 17 further comprising the steps of:

12 receiving additional information at a port controller in a second protocol
13 from a first node machine;

14 communicating the additional information from the port controller to a
15 switch fabric;

16 communicating the additional information from the switch fabric to a
17 switch device driver within an operating system;

18 communicating the additional information from the switch device driver to
19 a Forwarding Database Distribution Library (FDDL); and

20 communicating the additional information from the FDDL to a second
21 protocol client.

- 1 19. The method of claim 18 wherein
2 all communicating between the switch device driver to the FDDL is done
3 through a switch services API; and
4 all communicating from the FDDL to the first protocol client and the
5 second protocol client is done through an FDDL API.
20. The method of claim 18 further comprising the steps of:
defining a switch services API for communication between the switch
device driver; and
defining an FDDL API for communication between the first protocol client
and the FDDL.
21. The method of claim 18 further comprising the steps:
receiving the information from the switch device driver at an FDDL base
within the FDDL;
passing the information from the FDDL base to a first protocol FDDL
tower within the FDDL; and
sending the information from the first protocol FDDL tower to the first
protocol client.

1 22. A computer-readable medium having stored thereon computer-executable
2 instructions for performing the steps comprising:

3 receiving information at a port controller in a first protocol from a first
4 node machine;

5 communicating the information from the port controller to a switch fabric;

6 communicating the information from the switch fabric to a switch device
7 driver within an operating system;

8 communicating the information from the switch device driver to a

9 Forwarding Database Distribution Library (FDDL); and

10 communicating the information from the FDDL to a first protocol client.

11 23. The computer-readable medium of claim 22 having further stored thereon
12 computer-executable instructions for performing the steps comprising:

1 receiving additional information at a port controller in a second protocol
2 from a first node machine;

3 communicating the additional information from the port controller to a
4 switch fabric;

5 communicating the additional information from the switch fabric to a
6 switch device driver within an operating system;

7 communicating the additional information from the switch device driver to
8 a Forwarding Database Distribution Library (FDDL); and

9 communicating the additional information from the FDDL to a second
10 protocol client.

- 1 24. The computer-readable medium of claim 23 wherein
2 all communicating between the switch device driver to the FDDL is done
3 through a switch services API; and
4 all communicating from the FDDL to the first protocol client and the
5 second protocol client is done through an FDDL API.
- 6 25. The computer-readable medium of claim 23 having further stored thereon
7 computer-executable instructions for performing the steps comprising:
8 defining a switch services API for communication between the switch
 device driver; and
 defining an FDDL API for communication between the first protocol client
 and the FDDL.
- 9 26. The computer-readable medium of claim 23 having further stored thereon
10 computer-executable instructions for performing the steps comprising:
11 receiving the information from the switch device driver at an FDDL base
12 within the FDDL;
13 passing the information from the FDDL base to a first protocol FDDL
14 tower within the FDDL; and
15 sending the information from the first protocol FDDL tower to the first
16 protocol client.

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1 27. A network system comprising:
2 a network switch comprising a CPU, a memory system having circuitry
3 operable to attach to the CPU, a switch fabric system having
4 circuitry operable to attach to the CPU a port controller having
5 circuitry operable to attach to the switch fabric system, a software
6 application operable to execute on the CPU, a Forwarding Database
7 Distribution Library (FDDL) system operable to execute on the
8 CPU, and a switch device driver operable to execute on the CPU,
9 wherein the software application is operable to communicate with
10 the FDDL system, the FDDL system is operable to
11 communicate with the switch device driver, and the switch
12 device driver is operable to communicate with the switch
13 fabric;
14 a backbone; and
15 a workstation,
16 wherein the workstation is logically connected to the backbone, and
17 wherein the backbone is logically connected to the port controller of the
18 network switch.

1 28. The network system of claim 27 further comprising a second software
2 application operable to execute on the CPU,
3 wherein the second software application communicates with the FDDL
4 system.

1 29. The network system of claim 27 wherein the FDDL system defines an
2 FDDL API for communication with the software application, and the FDDL system
3 defines a Switch Services API for communication with the switch device driver.

1 30. The network system of claim 28 wherein the FDDL system defines an
2 FDDL API for communication with the software application and the second
3 software application, and the FDDL system defines a Switch Services API for
4 communication with the switch device driver.

1 31. The network system of claim 28 wherein the FDDL system comprises:
2 a base FDDL system;
3 a software application tower FDDL system; and
4 a second software application tower FDDL system
5 wherein the base FDDL system communicates with the switch device
6 driver, the software application communicates with the software
7 application tower FDDL system, the second software application
8 communicates with the second software application tower FDDL
9 system, and the base FDDL system communicates with the software
10 application tower FDDL system and the second software application
11 tower FDDL system.

1 32. The network system of claim 27 further comprising:
2 an independent software application operable to execute on the CPU; and
3 an independent software application shim operable to execute on the CPU,
4 wherein the independent software application communicates with the
5 independent software application shim and the independent software
application shim communicates with the switch device driver.

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9 system, and the base FDDL system communicates with the software
10 application tower FDDL system and the second software application
11 tower FDDL system.

Add B1

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